

## ***Sagittaria montevidensis* Cham. & Schlecht. (Alismaceae) - A new record for India**

**Anirban Roy, L.K. Banerjee**

Ecology Unit, Botanical Survey of India  
P.O. Botanic Garden, Howrah - 711103

**P.K. Mukherjee**

Department of Botany, University of Calcutta  
35, Ballygunge Circular Road, Calcutta - 700 019

---

### **Abstract**

*Sagittaria montevidensis* Cham. & Schlecht., an American weed, is reported from the wetlands around Calcutta - with detailed description, illustration and necessary notes.

### **INTRODUCTION**

During the survey of different wetlands of West Bengal, a species of *Sagittaria* (Alismaceae) was collected from several places of West Bengal. The species was identified as *Sagittaria montevidensis* Cham. & Schlecht. and can be placed as sub.sp. *montevidensis*. This is a new world species distributed in warm temperate South America, East of Andes, Argentina, Bolivia, Brazil, Ecuador, Paraguay, Peru and Uruguay (Bogin, 1955). A search at Herb. CAL revealed that there are atleast 3 specimens similar to this but misidentified as *S. sagittifolia*. These are : i) West Bengal, Howrah, November 1889, *Shaik Mukim* s.n.; ii) Calcutta, Salt Lake, Nalengola, 18.9.1964, *M.K. Ghosh* 2485; and iii) Indian Botanic Garden, 23.8.1969, *U. Chatterjee*, 10725. These match well with the specimen - Florida, Miry ground near Pensacola 12.8.1901, *A.H. Curtiss*, 6872.

Only 4 species : *S. longiloba* Engelm. ex. Torr. (= *S. greggii* J.G. Smith), *S. guyanensis* H.B.K. sub. sp. *lappula* (D. Don) Bogin, *S. latifolia* Willd. and *S. sagittifolia* L. (= *S. trifolia* L.?) have been recorded from India (Kartikayan *et al.* 1989) and neither Biswas & Calder (1937), nor Subramanium (1962) or Deb (1976) had included the present taxon in their works. Lavania *et al* (1990) included this species in their list without clear mention of exact locality of Indian distribution. Therefore, their report appears doubtful.

According to Bogin (1955), *S. guyanensis* and *S. montevidensis* are placed under subgenus *Lophotocarpus* characterised by appressed sepals in pistillate flowers and their pedicles recurved and thickened in fruit. while *S. latifolia* and *S. sagittifolia* are placed in the subgenus *Sagittaria*

### Anirban Roy *et al.*

characterised by reflexed sepals in pistillate flowers and their pedicels ascending and not markedly thickened.

*S. montevidensis* differs from *S. guyanensis* in more or less membranous bracts, sagittate leaves which are larger, narrow, oblong achenes with narrow not crested wings. *S. montevidensis* is found to occur as an emergent in lakes, canals, ponds and muddy flats of the river Ganga subjected to daily innundation. It grows most vigorously along polluted drainage channels in association with *Monocharia hastata*, *Sagittaria sagittifolia*, *Rumex dentatus*, *Scirpus* sp., *Cyperus iria*, *C. rotundus*, *Mariscus* sp., *Alternanthera philexeroides*, *Polygonum hydropiper*, *P. orientale* etc.

The taxon is reported to be cultivated in many botanical gardens and it is not known whether this was introduced at the Indian Botanic Garden or it was adventive there. Presently this species does not grow at this garden.

A description of the taxon is provided below with full nomenclatural citations and illustrations to facilitate its easy identification.

***Sagittaria montevidensis*** Cham. & Schlecht. *Linnaea* 2 : 156. 1827 sub. *sp. montevidensis*.  
 Bogin, Mem, N.Y. Bot. Gard. 9(2) : 196. 1955.

*Sagittaria pugioniformis* var. *montevidensis* Kuntze, Rev. Gen. 3 : 328, 1898.

*Sagittaria multinerva* Larranga, Escirt. Larr. 1 : 1. 1922.

Perennial aquatic herb with rhizomatous stock and adventitious roots. Leaves typically emerged; petiole 40-105 cm long, partly hollow cylindrical; lamina sagittate, 15-45 cm x 10-25 cm at middle, fleshy, glabrous, glaucous, entire, acute, basal lobes divergent. Scapes 50-115 cm long with 3-12 whorls of flowers, simple or branching at the lowest whorl. Bracts connate 1.5-2.5 cm long, free ends elongate, attenuate. Pistillate flowers at the lower whorls of the scape with thickened recurved pedicels and without functional stamens. Sepals 3, free, 0.8 x 1.17 cm, broad ovate, free, appressed, covering more than one half of the receptacle at maturity. Petals 3, free 1.8 - 2.2 cm long, ovate, membranous, white with purple spot at the base. Staminate flowers arranged in whorls at the terminal portion of the scape with narrow straight pedicels, sepals and petals same as pistillate flowers. Stamens numerous, filament 0.7-3 mm long, pubescent, anther 2-2.5 mm long, oblong. Mature pistillate heads 1.5-2.5 cm diameter with resin ducts. Achenes 2-3 x 1.1-1.3 mm, narrowly winged, obliquely beaked.

*Flowering and fruiting* : Throughout the year.

*Distribution* : South America : Argentina, Bolivia, Brazil, Ecuador, Paraguay, Peru, Uruguay, Florida.

*Sagittaria montevidensis*

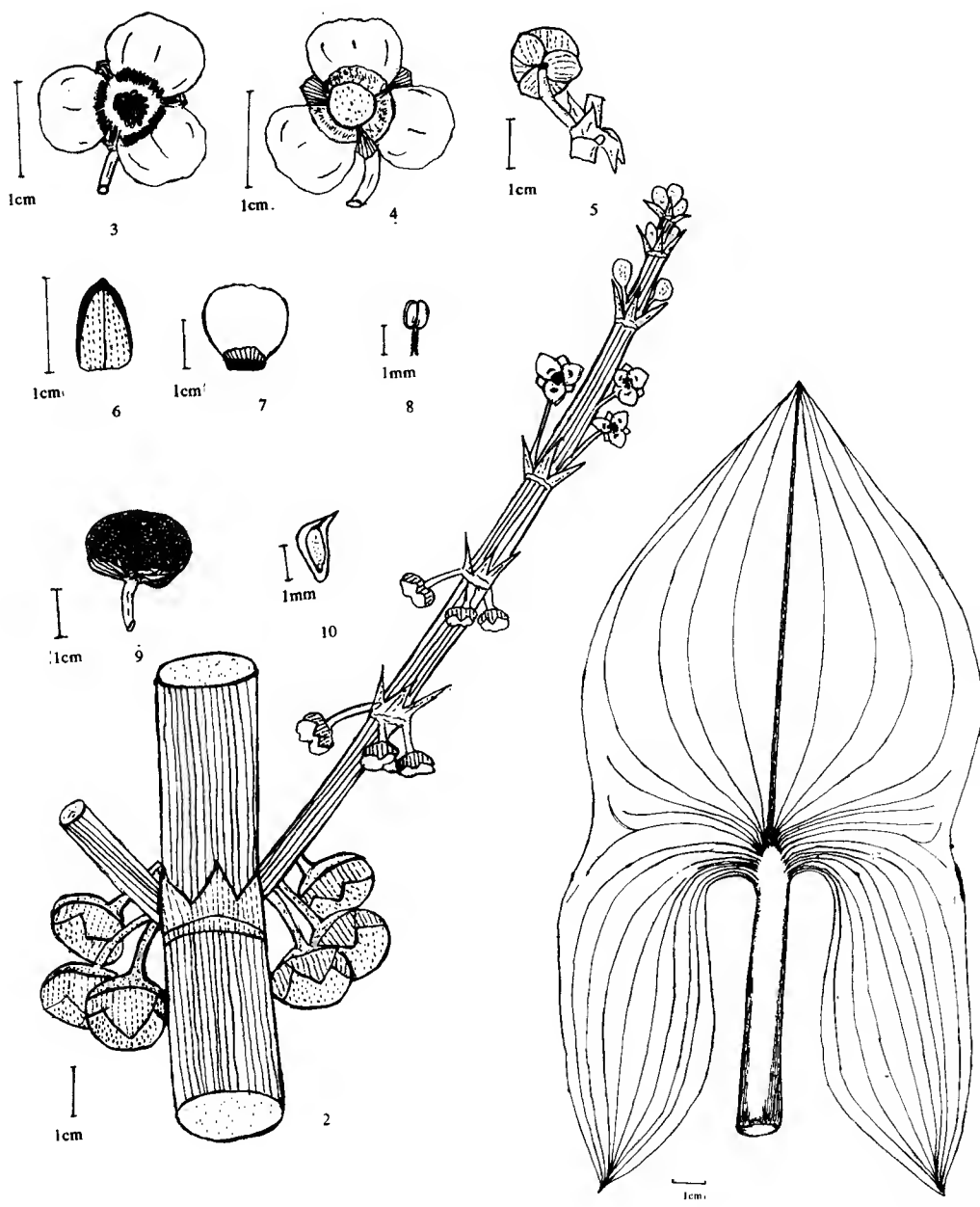


Fig. 1. Mature leaf; 2. Inflorescence; 3. Male flower; 4. Female flower; 5. Appressed sepals in head; 6. Sepal; 7. Petal; 8. Stamen; 9. Mature head with achenes; 10. Single achene;

### Anirban Roy *et al.*

India : West Bengal : Palta, (24 Parganas North), Howrah, Salt Lake & Barisha, Calcutta, Brace Bridge, (24 Parganas South).

*Specimens studied* : West Bengal : Salt Lake, Calcutta, 15.5.1997. *A. Roy* 7409 (CAL); Palta, 24 Pargana North, 17.5.1997. *A. Roy* 7436 (CAL.); Bank of the Ganga river, Howrah. 20.5.1997. *A. Roy* 7437 (CAL); Brace Bridge, 24 Paragana South, 26.5.1997. *A. Roy* 7440 (CAL); Barisha, Calcutta, 4.6.1997. *A. Roy* 7450 (CAL); Howrah, Nov. 1889. *Shaik Shikim s.n.* (CAL); Calcutta, Salt Lake, Nalengola, 18.9.1964. *M.K. Ghosh* 2485 (CAL); Indian Botanic Garden, 23.8.1969. *U. Chatterjee* 10725 (CAL).

### Acknowledgement

Authors are grateful to Dr. P.K. Hajra, ex-Director, Botanical Survey of India for his kind help and suggestion.

### Literature cited

- Biswas, K. & C.C. Calder 1937. *Hand book of Common Water & Marsh Plants of India & Burma*, Manager of Publications, Delhi.
- Bogin, C. 1955. Revision of the genus *Sagittaria* (Alismataceae). *Mem. N.Y. Bot. Gard.* 9(2) : 179-233.
- Deb, D.B. 1976. A study of the aquatic Vascular Plants in India, *Bull. Bot. Soc. Bengal* 29 : 155-170.
- Kartikayan, S., S.K. Jain, M.P. Nayar & M. Sanjappa 1989. *Florae Indicae Enumeratio Monocotyledonae*. Botanical Survey of India, Calcutta.
- Lavania, G.S., S.C. Paliwal & B. Gopal 1990. Aquatic vegetation of the Indian subcontinent. In : Brij Gopal (ed.) *Ecology and Management of Aquatic vegetation in Indian subcontinent*. Kluwar Academic Publishers, Netherlands 29-76.
- Subramaniam, K. 1962. *Aquatic angiosperm* C.S.I.R. New Delhi.